NavMed 369

UNITED STATES NAVY

MEDICAL NEWS LETTER

Editor - Captain L. B. Marshall, MC, USN

Vol. 17 Friday, 12 January 1951 No. 1

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Circular Letters:

A Consideration of Certain Public Health Aspects of Defense Against Biological Warfare: Part I: A definition of biological warfare is "the intentional use of living disease agents, or their toxic products, for the purpose of producing disease or death in man, animals, or crops". BW represents another attempt to unleash the forces of nature for use in war. Unlike the atomic bomb or other "blast"weapons, biological warfare is essentially anti-personnel in nature because it does not destroy buildings and machines but is directed at man himself or his food supply.

While this method of warfare is not to be casually dismissed, it should not strike terror in the minds of civilians or military personnel. The problem of germ dissemination in such a manner as to affect militarily significant numbers of people constitutes an item of continuing research in any country engaged in such work. Although great emphasis has been given to the defensive aspects of biological warfare research in this country, it was early appreciated that we must study offensive capabilities in order to know what to defend against.

In the language of biological warfare the pathogenic micro-organisms which might be used are referred to as "agents" or "BW agents". Reference is frequently made to three types: "anti-human agents," "anti-animal agents," and "anti-crop agents." Since this presentation concerns public health aspects, only the defense against anti-human BW agents will be considered, bearing in mind the fact that certain diseases of animals are transmissible to man and that a BW attack directed against man's food supply, if it should prove extremely successful, could result in nutrition problems of public health interest.

Let us consider, in a general way, what anti-human BW agents might be used against us. It is impossible to state that any specific pathogen will be the chosen agent, but it may be said that many species, types, or strains would be suitable. Certain organisms have been notorious producers of accidental infections among laboratory workers throughout the world. It would be logical to conclude therefore that these agents would rank high among likely candidates. They fall into several categories: bacteria, viruses, rickettsia, and even certain fungi. It is noteworthy that many of the laboratory infections caused by these organisms have resulted from their entry into the body by portals which are not usual in nature. For example, certain viral and rickettsial diseases, which in nature are ordinarily associated with insect vectors, may be contracted in the laboratory as airborne infections when the pathogen is released in the form of an aerosol from a centrifuge or blender. If this can occur by accident in a laboratory, there is considerable likelihood that it can be produced by design in BW.

The attempt could be made to introduce diseases which are already of usual, or endemic, occurrence in the area under attack. Such an outbreak might not be readily recognized as a BW incident, while in the converse situation an

unusual or exotic disease might be immediately suspect. The mere occurrence of unusual disease should not be labeled BW, however, unless there is much other evidence to substantiate such a claim. Nevertheless, epidemiologists should be alert to the possibility of BW implications in certain outbreaks. Two or more agents might be used simultaneously, thus complicating the problems of clinical and laboratory diagnosis and therapy.

It is possible to select BW agents to serve particular military objectives. For example, micro-organisms can be selected which, in effective dosages (among exposed susceptible individuals) could result in (1) a high fatality rate, (2) prolonged incapacitation with low fatality, or (3) only temporary illness. It is important to realize that many pathogenic micro-organisms or their toxic products could be used; however, it is impossible at this time to state which of the one or two dozen possible agents would constitute the chosen candidates of any potential enemy.

How would these agents be disseminated? If BW were initiated, it is entirely probable that it could be launched by one of two methods. One method involves the open use of missiles and munitions, perhaps capable of transport by aircraft, which would probably be designed to set up airborne clouds of BW agents. Such use would be similar in many respects to chemical warfare, except that the effects would be delayed because of the incubation periods of the several diseases. Indeed, such munitions might be used in conjunction with other conventional blast weapons in order to take advantage of disrupted sanitation and medical services. The aerosols of BW agents produced under such conditions would rapidly disperse into infective clouds which would be odorless, tasteless, and invisible and, thus, extremely difficult to detect. An important defense is military interception and prevention of the attack.

The second method involves the clandestine introductions of these agents to sabotage air, food, or water supplies. The saboteur who sets out to contaminate a water supply would not waste his biological material by disseminating it at the source of a protected supply, because filtration, chlorination, and the other usual sanitation procedures would defeat his purpose. He would more profitably attack the distribution system at a point where chlorine residuals are sufficiently low. Sabotage of food supplies could be successful only when directed at foods which are to be consumed without cooking (such as milk or salads) or cooked foods ready for serving. Therefore, cafeterias, bakeries, dairies, kitchens, or possibly soft drink distribution plants, where food is prepared for mass consumption or consumption by specific individuals are vulnerable to this form of attack. The attack would thus be primarily directed against the consumers of the specific contaminated items. It is obvious that internal security measures directed against the saboteur himself or against his access to food, water supplies, or important areas are the important defensive measures. During World War II the great measure of responsibility in this regard fell upon the Armed Forces and the FBI.

As to when or where an enemy might use BW, the answer is, of course, whenever and wherever it suits his purpose to do so. The possibility of sabotage directed against key individuals or selected population groups in advance of a declaration of war must be borne in mind. The use of BW agents prior to an open declaration of war could be timed to the anticipated incubation period of disease in such a manner that key individuals might be casualties at a time of need for important action on their part. Attacks against military targets might involve civilian casualties in this as in other forms of warfare. The greatest return for the least expended effort would the use of BW in areas where large civilian or military populations are concentrated. The greatest defensive effort must be directed upon these likely target areas and others such as key industrial, communication, and governmental centers. (CDR F. R. Philbrook, MC, USN, Preventive Med. Div., BuMed. Released by PIO, Dept. of Defense)

Note: Part II will be printed in the 26 January 1951 issue of the News Letter.

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Rehabilitation of the Amputee: The three people contributing most to the satisfactory rehabilitation of a man with an amputated limb are the man himself, the surgeon, and the limb fitter. The man must desire to wear and use an artificial appliance. He should not be allowed to consider himself an object to be pitied, nor that his deformity is noticeable. It should be emphasized that in many fields his amputation is little if any disability at work and that it is not a social handicap unless his mental attitude makes it so. Other people, especially family and friends, contribute greatly for weal or woe to the amputee's general morale.

It is the surgeon's responsibility that the final amputation is satisfactory and that it is done where the resulting stump will best function. The requirements for a suitable stump are:

1. Adequate length for activation of the prosthesis.
2. A well placed and well healed terminal scar, free from adhesion to the bony end, and without infolding.
3. Pressure bearing areas, when wearing a prosthesis, must be free from scarring, hyperesthesia or trophic change.
4. There should be no underlying infection in bone or soft tissues.
5. There should be no terminal "blob" of redundant soft tissue.
6. There should be no painful neuroma exposed to direct trauma in wearing a prosthesis, nor indirect trauma due to attachment to the terminal scar.
7. There should be adequate power in the muscles activating the stump and suitable range of movement at the affected joints.

The surgeon's responsibility extends equally to the immediate post-operative period. Large hematomata should be evacuated and the flaps resutured. Too

tight bandages should be loosened at once. The position of the stump should be frequently altered to avoid contraction deformity. The stump should be firmly and evenly bandaged to prevent edema. Frequent inspection should be made if there is any indication of infection.

Between the time when the stump is satisfactorily healed and the actual fitting of the prosthesis is a period in which rehabilitation may be hastened by aid of physiotherapy and occupational therapy. The amputee is taught the care of his stump and the proper type and use of crutches. During this period the stump is said to be "shrinking." As a result of the section of muscles in amputating the limb, their function is largely lost and atrophy occurs. Another result of operative trauma is the tendency to edema later aggravated by the usual dependent position of the stump. Much can be done to hasten shrinking and avoid edema by proper bandaging of the stump by an elastic bandage. This should be begun as soon as the patient can bear adequate pressure and continued under supervision until the prosthesis is fitted, and subsequently when the appliance is not being worn.

Sometimes these measures are inadequate and a peg leg is fitted. This is an excellent method of shrinking a refractory stump. Persisting contraction deformities may require surgical manipulation under anesthesia or even open operation.

When the stump is suitably shrunken and has ceased to be tender, the fitting of the prosthesis is carried out. Experienced limb fitters are invaluable. Each amputation is an individual problem and good initial fitting often determines the future attitude of the patient towards artificial limbs. Modifications are endless. In short thigh stumps where adduction is weak, a pelvic band is required. Bearing may require adjustment to avoid a wound scar, the upper end of the tibia varies greatly in its "flare"; one man prefers a free, another a brake in the knee mechanism, etc.

Patients begin walking on the prosthesis "in the rough" until the bucket is comfortable, the alignment satisfactory, and the knee, ankle, and foot mechanisms adjusted. Walking is begun under the supervision of the fitter and the surgeon who are able to detect gaits due to common faults in alignment and limb mechanisms. These corrected, the man continues walking, watching himself in a mirror and utilizing the hand rails if necessary. Refinements, such as ascending and descending stairs and ramps, stepping over obstacles, and social graces such as dancing, are taught in classes under supervision.

Some patients develop eccentric gaits which are natural and which, aside from the aesthetic aspect, do not detract from either speed or comfort in walking. Such cases are often best left alone. Certain conditions as age, artificial

or real knee joint--viz. A.K. or B.K. amputation, bilateral amputations, peripheral vascular disease, and spastic or other paralysis may modify the walking ability of patients.

Complications such as pressure fibromata on the skin of bearing surfaces may require "easing out" or more rarely, excision. If in easing pressure on bearing surfaces the corset is laced too tightly, the stump may be "choked" and the skin over its end break down. Some cases require ischial bearing to relieve pressure in a B.K. stump. In the author's experience, the most fool proof and comfortable stumps are the end bearing.

For lower limbs the functional restitution by prosthesis is very satisfactory. This is much less true with regard to upper extremity amputations. No mechanical device has been or will be evolved which can replace the human hand's strength and adaptability, with the fine adjustment of the fingers and tactile sense.

Bilateral arm cases are helpless and rapidity of fitting with prosthesis is indicated. With determination, however, bilateral patients frequently accomplish more than unilateral ones. They must so they do. Where a right-handed man loses his left arm high above the elbow he frequently makes little effort to use an artificial appliance except to fill a sleeve and hold objects by its weight. At heavier work and with an adequate stump length, he can use a work arm with one or more "hooks" and carry on well. If he loses his right arm his left hand usually takes over functions like writing, etc. With a below elbow stump and an adjustable bisected forearm and hook, a man can do an amazing amount of even fine work. All mechanisms are worked by shoulder harness and activated by shoulder shrug.

Rehabilitation of arm cases is difficult and requires great effort on the patient's part. These cases need occupational therapy or what is better, education in a shop or factory, in which they take up, perhaps, their former work. The learned professions and the business field, where bimanual dexerity is not required, can absorb those with the necessary education or the ability to be so educated.

Having been fitted with an artificial appliance the patient learns, in the Occupational Therapy Department, to do a number of things useful in everyday life such as tie his necktie, button large and small buttons, buckle belt, tie, untie and lace shoe, comb hair, cut thread, open and seal an envelope and remove letter, turn faucets off and on, use knife and fork, count change, open and close doors, windows and drawers, and write. The patient is his own best teacher and if he steadily uses his appliance becomes surprisingly adept. (Treat. Services Bull., November '50, G. M. Dale)

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The Navy's Amputation Center: The Amputation Center of the Navy is now established at the USNH, Oakland, California, following its transfer from the USNH, Mare Island, California, where this center had been located since its inception.

As World War II progressed the Medical Department of the Navy quickly realized that specified and specific provisions would have to be made for amputees of all types. Consequently, two amputation centers were established, one at the USNH, Mare Island, California, and the other at the USNH, Philadelphia, Pennsylvania. The latter one was disestablished when its services were no longer required.

The experience gained from World Wars I and II forcefully indicates that any comprehensive amputee rehabilitation program, to be effective, must include the following of minimum components: (1) adequate medical and surgical care; (2) proper physical reconditioning of the body and stump or stumps; (3) fitting individually constructed, comfortable and modern prostheses; (4) thorough training in the use of these prostheses; (5) psychological adjustment to the handicap; (6) prevocational testing, guidance, and educational services; and (7) selective job placement.

The present Center includes sections devoted to woodworking, machine shop, fitting room, orthopedic braces, above and below knee limbs, artificial arms, hands and feet, plaster casting, plastics, display section, class rooms, engineering and drafting section, experimental machine shop, testing section, stores section and the necessary office space for the Director, the shop supervisor, and clerical forces. Ramps are provided at the entrance for wheel chair patients and provisions have been made for extensive expansion if necessary.

The Center is a contributing member of the Advisory Committee on Artificial Limbs of the National Research Council and maintains full cooperation with other governmental agencies and the civilian artificial limb industry. Through participation in meetings with the Advisory Committee, duplication of effort is avoided and the members of the Armed Forces receive probably the most modern prostheses available. In due time civilian amputees also receive the benefits of the program. Close liaison is also maintained with the Department of Engineering, University of California, Berkeley and Los Angeles, where fundamental studies on artificial legs and arms are being conducted.

A complete cross-indexed patient file is maintained for each patient fitted with each new device. Data are secured during hospitalization as well as later when civilian life is resumed. The opinions and experiences of the individual with his prosthesis in his daily activities is considered to be the most valuable, reliable, and accurate source of information available. The purposes and objectives of the research section are explained carefully to each amputee

during his hospitalization so that at any future time he may be contacted personally or by questionaire, thereby obtaining full cooperation.

The Center has also developed a Navy School for Orthopedic Appliance Mechanics for hospital corpsmen of the Navy. The school covers a period of 6 months' intensive training combining didactic work with instruction at the bench in the various sections of the Center. So far as is known, no similar school of this type exists anywhere else in this country. The 8th class convened 1 January 1951. Because of difficulties encountered during World War II, the Navy elected to establish this school in order to build up a sizeable group of experienced Navy men to form a working nucleus for future needs. Graduates are considered 1st class apprentices in the trade. Through arrangement with the Veterans Administration a small number of physically handicapped veterans are accepted for the course. Several veterans have now completed the course and are employed in civilian artificial limb shops and at least one is completing plans to open his own business.

Some of the projects now being studied by the Center are: (1) Functional ankle joint, a device employing a flexible steel cable passing through a single rubber bumper, used to attach the foot to the ankle block, an integral part of the plastic shin. By means of an adjustable nut inside the plastic shin adjustment may be made for each amputee patient. (2) Plastic shin or shank. It is believed that the first plastic shank of a production type was originally produced by the Department in 1943. Changes and improved materials now allow efficient and rapid production of a shin which is lighter and stronger than the original. Experimental cosmetic covers are being made for a small number of female amputees simulating closely the appearance, color, texture, and feel of human skin and therefore allowing the wearing of sheer hose. (3) Soft below knee socket. Follow-up studies and interviews with substantial numbers of patients indicate this to be an important improvement. (4) Above knee suction socket. Approximately 90 percent of all above knee amputees are fitted with suction sockets. Use of the suction socket eliminates the heavy and uncomfortable waist belt which is ordinarily attached through a hip hinge to the socket. (5) The Symes Prosthesis. This is a plastic prosthesis employing the functional ankle and a soft interlining. (6) The Tilting-Table Prosthesis. Designed for hip disarticulations and partial pelvectomies. (7) The Navy-Fitch Artificial Arm, now commercially manufactured and available at artificial limb shops. (8) The Articulated Hand and Cosmetic Glove. Designed to produce an artificial hand and glove which is interchangeable with the conventional hook so that arm amputees might have a device for social use. (9) Pronator-Supinator. A device to afford the motions of pronation and supination. (10) The Carpometacarpal Prosthesis. Designed through flexible hinges to retain the powers of extension, flexion, abduction, adduction, and circumduction. (11) The Cineplastic Prosthesis. The Navy-Fitch Arm has been fitted to a number of above-elbow arm amputees, both unilateral and bilateral, in which the hook or hand is actuated through cineplastic motors surgically provided in the pectoral muscles. (CDR T. J. Canty, MC, USN)

A Water-Soluble Contrast Medium for Bronchography: The ideal material for bronchography should be: (1) non-irritating to the lungs and productive of no general reaction, (2) miscible with bronchial secretions, (3) quickly and easily eliminated from the lungs, (4) capable of filling or outlining even the smaller bronchi without filling the alveoli, (5) capable of maintaining the filling until x-ray films can be exposed, (6) capable of giving good contrast roentgenogram, (7) easy to administer, and (8) capable of giving consistently diagnostic x-ray films.

Unfortunately, no material has been found which fulfills all of these requirements. Any substance which enters the lungs must act as a foreign body.

Iodized oils have for many years been unchallenged as a medium for the x-ray diagnosis of diseases of the bronchi. These oils have certain inherent properties which offer serious objections, the chief of these being their slow resorption with the consequent addition of retained radiopaque densities to confuse the x-ray picture for long periods. This is due to the fact that oils are insoluble in bronchial secretions and that the iodine is slowly liberated from the oil. In addition to this slow resorption, iodized oils offer further objections: radiopacity is fixed by the constant iodine content, viscosity is fixed by the chemical nature of the oil, oil causes a marked macrophagic reaction of long duration, lipoid pneumonia and granuloma have been reported, and, since iodine is slowly liberated from the oil, iodism occasionally occurs.

In 1948, Morales and Heiwinkel reported on the use of a water-soluble contrast medium, Viscous Umbradil. This mixture consists essentially of Iodopyracet (diethanolamine salt of 3,5 - diiodo - 4 - pyridone - acetic acid) and sodium carboxymethylcellulose (CMC). Morales and Fischer have subsequently demonstrated its usefulness.

In addition to being water-soluble, the viscosity can be varied within wide limits and yet the surface tension is low enough to allow the material to reach the smallest bronchi. By varying the viscosity, any degree of filling can be obtained. The low viscosity medium produces a thin covering of the mucosa while the higher viscosity material fills only the large bronchi. The medium of extremely low viscosity, however, frequently causes marked alveolar filling with obliteration of detail in the bronchi. All traces of this radiopaque material disappear from the lungs by x-ray in from 3 to 5 hours, since the material is easily coughed up and the Iodopyracet is quickly absorbed.

Viscous Umbradil B, as supplied, consists of Umbradil 50 percent, sodium carboxymethylcellulose (CMC) 2.6 percent, and a local anesthetic, Xylocaine (diethylaminoaceto-2,6-xylidide), 0.5 percent. With this material the authors had difficulty in preventing alveolar filling. The content of CMC was therefore increased to 3.3 percent, using high viscosity, food grade type CMC. This has given consistently better results and has markedly decreased the

amount of alveolar filling, thus keeping the material from the area where the main reaction occurs in the lungs. The viscosity can, however, be varied to suit the needs of the user.

The patients are prepared by giving nembutal 0.1 Gm. one hour, and codeine 60 mg., atropine 0.4 mg. one-half hour before the procedure. Pontocaine 1 percent is used to anesthetize the larynx, pharynx, and vocal cords. A small rubber catheter is then introduced through the nose and into the upper trachea. The trachea and bronchi are then anesthetized by instilling pontocaine 1 percent through the catheter and positioning the patient to insure thorough, wide-spread anesthesia. This is essential. Five to 10 minutes should be allowed for the anesthesia to take full effect, since Viscous Umbradil is a little more likely to produce coughing than are oils. A total of about 6 cc. of 1 percent pontocaine has been adequate and has produced no reactions. Symptoms of pontocaine reaction should be watched for, however, and intravenous barbiturate should always be immediately available.

The Viscous Umbradil mixture is then injected slowly through the catheter and the patient is positioned to secure filling of the bronchi of one lung. This may be followed fluoroscopically. Speed and efficiency after injection and filling is important since there is a tendency for the material in the upper lobe to flow into the lower. Upright stereoscopic posterior-anterior and appropriate oblique x-ray films are then made. The opposite lung may then be examined in a like manner. About 10 to 15 cc. of Viscous Umbradil are needed for each lung. The fact that the Viscous Umbradil contains 0.5 percent of a local anesthetic must be taken into account in considering the total anesthetic used. The use of two anesthetic agents in this way should probably be eliminated.

The technic of taking films varies slightly from that used with iodized oil. Viscous Umbradil has slightly less contrast than do oils but this is easily compensated for by the x-ray technic. Morales recommends exposure as for "normal chest x-rays." The authors' films have been made at a tube-to-film distance of 66 inches and about 5 KV has been added to the exposures for normal chest films in the various positions. With this technic the contrast is entirely satisfactory. Stereoscopic viewing adds to the diagnostic value of the films. In this series, postural drainage following bronchoscopy was purposely omitted. Subsequent x-ray films were made about 5 hours after completion of the procedure and were entirely clear, even when a less viscous medium had been used early in the series. There is no residual to confuse the x-ray picture later. Furthermore, the procedure with Viscous Umbradil can be repeated the next day if too much alveolar filling is apparent on the first attempt at bronchography. This "second attempt" is often impossible with iodized oils because of the retained radiopaque material.

Three of the patients had transient, mild elevation of temperature 12 hours following bronchography, not necessarily attributable to the contrast medium. In the authors' experience, temperature elevation is also seen not infrequently following the injection of iodized oils.

No reaction to iodine has been seen in this series. Because of the stability and rapidity of excretion of Umbradil, further experience may show that this material can be used even where a history of iodine sensitivity exists.

The contraindications to the use of Viscous Umbradil are: (1) the presence of acute respiratory infection, (2) sensitivity to Umbradil (rare), and (3) acute nephritis or uremia since Umbradil is excreted by the kidney. (Dis. of Chest, December '50, R. J. Atwell and R. L. Pederson)

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Use of Homografts in Extensively Burned Patients: A homograft is a transplant of tissue from one individual to another of the same species. Transplantation of tissue and of whole organs within a species or from one species to another has, in the past and occasionally at the present time, been more productive of fables than of scientific facts. At the present time the value of corneal homotransplantation is unquestioned, that of bone and cartilage is still under debate, while the practical value of the skin homograft has been only partially recognized and hesitantly used.

Numerous careful studies, both clinical and experimental, have established the following data concerning the homotransplantation of skin:

1. Skin homografts transplanted orthotopically, that is, to naturally skin-bearing surfaces, will take approximately as well as autografts transplanted under equivalent physiologic conditions.
2. The take of skin homografts is probably not influenced by disparity in race, sex, or blood group.
3. There are probably no skin groups, analogous to blood groups, matching of which will influence favorably or adversely the take of skin homografts.
4. After taking, skin homografts not only survive for varying periods of from 3 to 10 weeks, but actually, for a time at least, proliferate epithelium and grow briefly.
5. Ultimately all skin homografts melt away and disappear completely, the sole exception being in the case of identical twins in which the skin homografts may persist indefinitely.
6. Reports of permanent survival of homografts are errors in observation and experimental method and reflect the failure to take into consideration the survival, persistence and Phoenix-like regeneration of autogenous epithelium from deep-lying crypts, hair follicles, and sebaceous glands which have been buried beneath exuberant granulation tissue or burn debris.

7. Despite the early reports of Underwood and others of severe reactions attending the breakdown of homotransplanted skin, homografts melt away in from 3 to 10 weeks, unaccompanied with any appreciable local or systemic reaction. This breakdown and disappearance of homografts is not due to infection, vascular congestion, edema or anaphylaxis.

8. Skin homografting provokes an immune state which is systemic in compass and not confined to the neighborhood of the foreign graft. The presence of a lymphatic drainage system is necessary for the immunity to be called into being, and penetration of the homograft by blood vessels must occur before the immune state can become effective in causing the breakdown of the graft. Both of these processes are inherent in the mechanism of taking of a skin graft.

9. The skin homograft elicits, therefore, and then in the ensuing weeks submits to an immune reaction, which it has called into being and which ultimately causes its breakdown and disappearance. Subsequent skin grafting from the same donor to such a sensitized recipient elicits an accelerated immune reaction which causes rapid disappearance of the homograft in a very few days' time. Repeated homografts from the same donor are therefore useless, but homografts from fresh donors will take almost as well as at the initial homografting. Consequently it is impossible to desensitize or denature either donor, graft, or recipient by any known method so as to ensure or augment survival of the graft.

10. Skin homografts as well as autografts may be stored under sterile conditions of refrigeration for a period up to 3 weeks, with apparently no diminution in the incidence of takes. The survival time of such stored grafts is apparently not affected by the length of storage.

It is now well established that the intelligent use of homografts as a physiologic skin dressing can be life-saving or of inestimable benefit in expediting healing and recovery in severely burned patients. At the present time homografts are used to provide temporary skin coverage (1) when autogenous skin is not available because of the extent of the burn, (2) when, although autogenous skin is available, the patient is too ill to stand a formal grafting procedure and (3) to stimulate the patient's healing and reparative processes in cases in which autogenous grafting has consistently failed. The results of homografting are usually prompt and dramatic. Infection is brought rapidly under control; heat, fluid and protein loss is curtailed; and comfort and ease of nursing care is promoted or increased.

In one of the authors' cases, homografting answered the problem of life-saving surface coverage in a patient so extensively burned that skin for autografting was not available. In another, homografting provided a physiologic plug to stop extensive protein leakage in a patient whose acute hepatitis made nitrogen balance mandatory. Also, in this patient, for the same reasons, autografting would have been hazardous although sufficient donor skin was available.

Protein replacement, fluid balance, chemotherapy, physiotherapy and other supportive measures were exhaustively used. In both cases the emphasis was primarily on supportive therapy and prompt skin coverage to preserve life, with the realization that optimal cosmetic and functional results must be temporarily postponed. Extensive reconstructive surgery will be required later on in both cases to correct scar tissue contractures, eliminate keloid, and to improve bearing surfaces and cosmetic appearance.

A brief description of a few practical points in the homografting procedure would seem appropriate. Selection of donors should be made with equal care as far as the absence of syphilis, malaria, or infectious hepatitis is concerned, as in the case of blood donors. It is important as far as possible to rule out the presence of any abnormal bleeding tendency or sensitivity to novocain by specific questioning. Grafts are best cut under local infiltration anesthesia with 0.5 percent novocain, using a Pitkin continuous syringe for the infiltration which avoids the dermis and is aimed for the subcutaneous tissues. Infiltration of the former creates lumpiness in the donor site which interferes with cutting the graft. The entire donor area must be infiltrated. The thigh is preferred as donor site. Grafts may be cut either freehand or with one of the numerous graft-cutting devices available. The freehand method using the Blair-Brown knife and suction retractor is quickest and most efficient with limited assistance. It is well to have 4 teams for any extensive homografting procedure, namely, one to shave, prepare and drape the donor site; one to infiltrate the site with novocain; one to cut the graft and one to dress the donor site. Alterations and combinations of this plan may be made for short homografting procedures.

It is preferable, for good lay cooperation, to maintain the skin donors in as ambulatory a condition as possible, able to continue working, and free enough from discomfort as not to prejudice themselves and others against future contributions of skin. This requires a good dressing of the donor site, well and carefully applied. The authors used 2 to 3 thicknesses of fine mesh scarletred gauze, reenforced by several layers of gauze applied and fixed in place as described by Brown et al. It is advisable to warn donors of the probability of red-staining of the dressing by the serum-moistened, scarlet red ointment so that they and friends and relatives will not suspect hemorrhage or disaster 24 hours later. It has been found advantageous to check each donor dressing in 48 hours to be sure that all is well.

In the 28 homograft cutting operation described, no case of infection of the donor area occurred; all donors remained ambulatory and able to continue their jobs. Also, all donor sites were healed completely within 14 days. (Am. J. Surg., 15 November '50, G. B. Sanders and R. H. Moore, Jr.)

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Progress Notes on Fifty Diabetic Patients Followed Twenty-Five or More Years: A group of 50 patients whose diabetes mellitus began prior to 1924 has been traced for over 25 years and a progress report to 1 November 1949 is presented.

The prolonged duration of life in this series after the onset of diabetes is impressive. Fifty patients with diabetes mellitus of 5 years' duration or more, whose age at onset was less than 40 years, were selected at random in 1929. Thirty-one of the group survive; their average age to Nov. 1, 1949, is 44.8 years and the duration of their diabetes 28.4 years. Nineteen of the group have died. The average age at the time of death was 34.9 years and the duration of diabetes 17.6 years. The average duration of diabetes of the 50 patients, living and dead, is now 24.3 years.

Cardiovascular-renal disease has been the most significant cause of death. Nephritis has claimed 3 patients, coronary occlusion 3 patients, and cerebral thrombosis 1 patient.

Pulmonary tuberculosis has been prominent, occurring in 7 patients, of whom 2 survive. This disease was the cause of death in 4 persons. Nontuberculous bacterial infection has also been of grave significance and has claimed 4 patients. It is believed that if recent advances in biochemotherapy had been available to the patients who succumbed to infections their courses might have been significantly altered.

Uncomplicated diabetic coma has been the cause of death in 1 patient.

Carcinoma has occurred in 2 patients, affecting the colon in both instances, but has not been the cause of death in any patient.

Gangrene has not occurred. Osteomyelitis has developed twice, necessitating amputation of a toe in 1 person and partial finger amputation in another.

Retinopathy has been reported in 18 of 29 living patients examined. No instance of blindness has occurred, and there have been no mature cataracts, though early lenticular opacities were reported in 4 of the living patients.

Arterial calcification has been demonstrated roentgenologically in 27 of 29 persons examined.

Proteinuria of more than 20 mg. per 100 ml. has been found in 9 of the 31 living patients and in 5 exceeded 100 mg. per 100 ml. Eight of the living patients showed moderate azotemia, as evidenced by blood nonprotein nitrogen levels of 40 to 50 mg. per 100 ml. The systolic blood pressure was found to be elevated above 140 mm. Hg in 13 patients and the diastolic pressure above 80 mm. Hg in 13 patients.

A living child was born to 1 patient at the age of 36.4 years, after 27.6 years of diabetes, and the wife of one of the male patients gave birth to a normal child after his diabetes had existed 29.6 years.

The experience in tracing this group of patients is, on the whole, heartening. Although the mortality has been high, the surviving group, numbering 31 patients, or 62 percent, are with one exception active persons, living useful lives. (Arch. Int. Med. (A.M.A.), December '50, R. E. Reuting)

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Acute Thallotoxicosis. Report of Two Cases Treated With BAL: Thallium is a potent insecticide and vermicide, frequently disguised in pleasant-tasting media. Such disguise may fascinate toddlers and small children if left within their range of curiosity.

Two cases of thallium intoxication were observed simultaneously from "Quick Kill," a crushed vanilla wafer insecticide containing thallium sulfate 2.25 percent. Both children, playmates, sampled repeatedly over several weeks the treasured cookie crumbs in the one-ounce jars.

One of the 2 patients, a 4-year old white male who ingested a considerably larger quantity of the wafers, developed complete muscular weakness, incoordination, loss of speech, and extreme polyneuritis in addition to the complete alopecia. He was semicomatose for 4 days before BAL was administered. Progressive ptosis, increased lethargy, "mumble jumble" speech, stumbling and falling, and moderate tremors of both hands developed. Gross tremors of the hands were outstanding, and there was bilateral wrist and ankle drop.

British anti-lewisite (BAL, 2,3-Dimercaptopropanol) was begun on the 4th hospital day when cerebral irritation was most pronounced; prognosis, at this point, seemed hopeless. The initial dosage of 5 mg. per Kg. of body weight per 24 hours in divided doses was given as suggested by Bivings and Lewis for mercury poisoning, as no reference to thallium intoxication was available at this time. The therapy was continued at this level every 4 hours for 3 days without noticeable improvement. No flushing or hypertension developed to suggest toxicity or therapeutic effectiveness. Immediately following cessation of treatment he was as ataxic and lethargic as before. However, 48 hours later the ataxia diminished sufficiently to enable him to partially feed and clothe himself, and his speech began to clear. Fourteen days following treatment the wrist and ankle drop, ptosis, and tremors were no longer present. He walked unassisted and was discharged. One month later only alopecia remained as evidence of his intoxication; many fine new hairs were appearing.

The other child, his playmate, had ingested less of the thallium and developed transient, though definite signs of cerebral and cerebellar irritation together with complete loss of hair.

Physical examination revealed the total alopecia as the only detectable abnormality in an otherwise healthy 4-year-old female. The hemogram and urinalysis were negative; roentgenograms of chest and long bones were normal. A spinal fluid examination was not performed.

BAL was administered for 3 days, 5 mg. per Kg. of body weight per 24 hours, then discontinued because of nausea and vomiting; no flushing or hypertension appeared. With symptomatic treatment, improvement was steady, and she was discharged 10 days after admission. One month later many fine new hairs were visible, although the alopecia was still prominent.

Close questioning revealed these 2 children to have played together during the preceding 4 weeks. Three days following her hospitalization the second patient volunteered to her mother that she and her playmate had been eating some crushed cookies in a jar in a neighbor's yard. Upon investigating, her mother found a large open carton containing 100 jars of "Quick Kill" in the yard where they had been for several months. It was then determined that the girl had eaten only a small amount of the poison-containing crumbs but that the boy had eaten the contents of almost 4 jars over an estimated period of 10 days.

The use of BAL in the first instance may have been responsible for the child's survival as he was considered moribund at the time of its institution. The authors are not able to state conclusively the role BAL played; however, in view of the known effectiveness with some heavy metals it was deemed worthy of trial. Further opportunity to study the usefulness of British anti-lewisite in the management of acute thallotoxicosis should be undertaken as new cases present themselves to enable formulation of accurate dosage schedules as well as its true value.

The use of such an acute intoxicant as thallium in common household poisons points up the necessity for closer control and more adequate warnings to parents. Two such instances present clearly the dictum that when poisoning is suspected one should not cease questioning until the toxic agent is revealed. (J. Pediat., November '50, J. A. Welty and B. H. Berrey)

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Gelfoam and Thrombin in Treatment of Massive Gastroduodenal Hemorrhage: It is difficult to evaluate the value of any hemostatic agent in the treatment of massive gastroduodenal hemorrhage because of the marked reduction in mortality rate being reported as a result of a rigid medical routine. The trend of medical thought appears to be toward a conservative form of treatment for at least the first 24 to 48 hours.

There is general agreement among all surgeons that if a patient does not respond to rigid medical treatment within the first 24 to 48 hours, surgical intervention is indicated. It is well known that the mortality rate rises sharply in the surgically treated group after 48 hours. Conservative management implies treatment such as adequate replacement of blood, bed rest, morphine and therapeutic diets such as Meulengracht's.

With this routine, Sandusky and Mayo have reported a mortality rate of 5 percent in a group of 101 patients of a series of 119 admissions who were treated non-operatively. In the remaining 18 cases of this series in which the patients were surgically treated the mortality rate ranged from 14.2 percent to 54 percent depending upon the type of surgery. In another report, on 177 patients with massive duodenal hemorrhage, 165 were treated conservatively with a mortality rate of 4.2 percent, and 12 patients treated surgically after 48 hours with a mortality rate of 33.3 percent.

Costello reported a study of 300 consecutive cases of massive gastroduodenal hemorrhage of which a 25 percent mortality rate was reported for all methods of treatment. In the last 2 years he set up a non-operative routine in which adequate replacement of blood, bed rest, feedings, sedation, and antacids were the principal features. During this interval of time, 73 patients were treated with this method, with a mortality rate of 4 percent. Costello was of the opinion that the single most important factor responsible for the reduction of mortality rate from 25 percent to 4 percent in his group of patients was the adequate blood replacement.

The work of Daly and co-workers at Wayne University in which buffered thrombin was given to all patients with massive gastric hemorrhage in addition to other conservative measures has produced quite promising results. However, a mortality rate of 4 percent as reported by Costello for his non-operative group in which merely supportive measures were employed without any direct attack being made upon the bleeding site in the stomach or duodenum makes it difficult to ascribe any beneficial effects to any hemostatic material used unless a mortality rate appreciably lower than 5 percent can be reported in a large enough group of patients.

The remarkable hemostatic effect reported by the use of gelfoam and thrombin in neurosurgery and urologic surgery resulted in the authors' experimental employment of these two hemostatic agents in experimentally produced venous and arterial lesions of the dog's stomach. The dramatic hemostatic results obtained seemed to justify a clinical study in which gelfoam and thrombin were used clinically in the conservative treatment during the first 24 to 48 hours of a patient with massive gastroduodenal hemorrhage.

To date 28 patients have been treated. These were all admitted to the hospital with a diagnosis of massive gastroduodenal hemorrhage. No patient

was put in this group unless the blood count was under 3,000,000 red blood cells, and in most of the patients red blood counts under 2,500,000 were found. Although the authors had intended to wait until 100 patients had been treated by the use of gelfoam and thrombin before reporting the results obtained, the remarkable results obtained in this group of 28 consecutive patients has impelled this preliminary report in order that the method may be used more widely. Only by so doing can a sufficient number of patients be treated over a relatively short period of time. This would permit proper evaluation of the place of hemostatic preparations in the treatment of massive gastroduodenal hemorrhage.

All patients admitted are immediately seen by the surgical resident and the following routine instituted: (1) History is taken and physical examination made to ascertain the etiologic basis for the gastric hemorrhage. (2) Complete blood count is taken. Blood studies are done to rule out blood dyscrasias. (3) Treatment is instituted for shock if present. (4) Blood pressure and pulse readings are done every 2 hours for the first 48 hours. The attending surgeon is notified immediately if the blood pressure drops below 90 mm. of mercury or if the pulse shows a progressive elevation. (5) There is replacement of blood depending upon the condition of the patient and the red blood count. Patients in shock are given 1,000 cc. of whole blood immediately. Patients with red blood counts below 2,000,000 are given 1,000 cc. of blood at once; patients with red blood counts over 2,500,000 are given 500 cc. of whole blood. Blood is then given as often as needed within the first 24 to 48 hours in an effort to maintain circulatory balance. A progressive rise in blood pressure and a drop in pulse rate is an index of improvement. A continuing drop in blood pressure and elevation of pulse rate despite adequate blood replacement within the first 24 hours is an indication for surgical intervention. As much as 10,000 cc. of blood may be given during this period of time. (6) In addition to adequate blood replacement and the conservative routine of Meulengracht's diet, antacid therapy, sedation, and bed rest, the only new and additional therapy is the use of gelfoam and thrombin. (7) The gelfoam is prepared as a fine dry, very light powder. Well over 75 percent of the patients admitted with massive gastroduodenal bleeding present an obvious diagnosis of gastroduodenal ulcer. In these cases two tablespoonsful of gelfoam are mixed with 2 ounces of milk and cream and given to the patient orally every 2 hours. Immediately following this the patients are given 250 units of thrombin solution. The thrombin solution is prepared by dissolving 1,000 units of thrombin in 200 cc. of water; 50 cc. of this solution containing 250 units is then given after the gelfoam. (8) Amphojel is given following the thrombin solution in a dose of 1 tablespoonful every 3 hours. The purpose of the amphojel aside from its mild astringent action is to neutralize the acidity and prevent the action of the pepsin in the digestion of the blood clot to be formed over the ulcerative area. (9) If a diagnosis of bleeding from esophageal varices is made, gelfoam powder is given in its dry state and is then followed by thrombin solution. The dry gelfoam powder coats the esophagus in its downward passage. The results in one case were excellent. No amphojel or milk and cream is used in these cases.

Although the method as outlined is adhered to in a general way, each case is treated as an individual problem. The amount of blood given and the intervals between transfusions are varied with each patient depending upon the need. The only fixed and unchanging routine of treatment is the giving of the 2 tablespoons of gelfoam powder and 250 units of thrombin every 2 hours. This is imperative in all cases treated.

Although evaluation of hemostatic agents is difficult in those areas that cannot be directly visualized, the fact that 27 consecutive patients were treated using gelfoam and thrombin in addition to the usual form of therapy becomes significant only because all these patients recovered without surgery. It is true that the series is a small one. Twenty-seven consecutive cases of massive gastric hemorrhage without a single death would seem to suggest that the use of gelfoam and thrombin was the deciding factor. In the one surgical death it is believed that sufficient time was not permitted for the action of this hemostatic agent. It is also quite true that in the presence of a large sclerotic, eroded vessel at the base of an ulcer this hemostatic agent might fail. Time alone and the accumulation of a larger series of cases will answer this question. This is the purpose of the preliminary report so that such cases may be available in a reasonably short period of time to test the validity of the observations.

Addendum: Since this article was submitted for publication, 46 additional patients with massive gastroduodenal hemorrhage were treated with gelfoam and thrombin without a death. This makes a total of 73 consecutive patients treated in this manner without a death. (Am. J. Surg., December '50, M. O. Cantor et al.)

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The Pterygium: The incidence of pterygium among military personnel in semitropical Hawaii is higher than in most sections of the United States; however, its frequency does not approach that of the more tropical countries. A uniform satisfactory treatment of this ancient problem is far from achievement. One who sees many pterygiums cannot help but be impressed by the large numbe which have previously been treated surgically. In the published series recurrence rates vary. One may justifiably suspect that in a series in which no failures are reported the patients have not been carefully followed.

The author and his colleagues treated 300 patients with pterygium over a period of 18 months at the Tripler Army Hospital. In about one-third of the patients the lesion was recurrent, and previous operation had been done elsewhere. The obvious failure of the usual method of treatment prompted him to employ various technics in an effort to determine the most satisfactory treatment.

Definite conclusions are not justifiable from a survey of this sort. Several surgeons performed these operations, and the various technics were not represented by equal numbers of cases. The postoperative follow-up period varied

from 3 to 18 months. The severity of the condition and the number of recurrences were not equally distributed for the various operative procedures. Many patients were subjected to the same exciting factors after operation, whereas others were not. However, certain observations may be of value.

Every pterygium should be removed surgically; and the earlier the operation, the better will be the functional and cosmetic result. It is important to succeed with the first operation, because a recurrence may result in a major ophthalmologic problem. A surgically sound procedure is one of the "bare sclera" methods, which also calls for total removal of the pathological subconjunctival tissues. This may be accomplished by the methods advocated by D'Ombrain, Sugar, McGavic or the present author. An operation which diverts the direction of the blood vessels after excision of the growth also seems to be attended with higher success. The author prefers to combine these two procedures by performing a Campodónico or a Bangerter operation, at the same time leaving a small area of bare sclera 1 to 2 mm. in width at the limbus. Although these methods are recommended in the majority of cases of pterygium, including the recurrent type, no one technic should be used in all cases. The procedure should be varied, depending on the type of the lesion and the stage of growth. The early pterygiums are well treated by Campodónico's method. Bangerter's technic is useful for larger growths. Multiple recurrences are best treated by a "bare sclera" method, a mucous membrane transplant or Spaeth's rotating island flap. Roentgen therapy after operation may aid in preventing further recurrence; however, it was not definitely effective in the author's experience. Beta radiation may eventually prove to be of great value for this purpose when it becomes more widely available. (Arch. Ophth. (A.M.A.), December '50, Col. J. H. King, Jr., MC, USA)

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Activity of Cashew (Anacardium Occidentale) Nutshell Oil in Human Ancylostomiasis: In a previous communication the authors reported on the vermicidal activity of cashew (Anacardium occidentale) nutshell oil (CNO) in canine ancylostomiasis. This drug, when given in a single dose of 0.5 to 1.0 Gm. per Kg. body weight, removed 90 to 100 percent of living Ancylostoma and Toxocara. The vermicidal effect was somewhat lower in other canine helminthiases (Dipylidium, Trichuris). There was no local or systemic toxic reaction even with doses as high as 20 Gm.

These encouraging results prompted them to try CNO also in human ancylostomiasis, especially because the commonly used vermicides are either toxic, as oil of chenopodium, carbon tetrachloride, thymol; or of limited efficacy, as hexylresorcinol and tetrachlorethylene, which are said to remove only 50 to 60 and 60 to 80 percent, respectively, of the hookworms.

The clinical experiments were performed on patients of the Medical Department of the "Hospital das Clinicas" of the Faculty of Medicine of the University of Sao Paulo, Brazil. Only such patients who constantly eliminated a high number of eggs were treated. The feces were examined at least 3 times before treatment in order to establish the constancy of the egg elimination. A saline purgative was administered before stool collection. The results of the treatment were checked by stool examinations 7 and 14 days and, if possible, 1 to 2 months after the administration of the drug in gelatine capsules (1 Gm. of CNO per capsule). The dose for adults varied between 4 and 6 Gm., for children between 3 and 4 Gm. The drug was given in the morning on an empty stomach and no food was allowed until noon. If necessary, the treatment was repeated as often as 4 times in 2 week interval.

In many instances, CNO produced a short period of diarrhea, 2 to 4 hours after the drug was given. The patients did not have subjective symptoms, except for some heart-burn which passed rapidly.

In 1 group of patients the stool examinations were performed by counting the eliminated eggs according to the method of Stoll. In another group only semi-quantitative examinations were done, classifying the amount of eggs from 1 to 3+.

It was observed that:

1. Cashew nutshell oil (CNO) has a vermicidal effect in human ancylostomiasis.
2. With an average total dose of 13 Gm. divided in 3 single doses given at intervals of 2 weeks, a complete cure was achieved in 64 percent of the cases. In the remaining 36 percent the number of eliminated eggs was reduced by 78 to 99 percent of the initial count.
3. In 3 cases of Ascaris and 3 cases of Trichuris infestation very marked vermicidal effect was observed.
4. Cashew nutshell oil has a mild purgative effect. No toxic symptoms were observed. (Am. J. Digest. Dis., November '50, F. W. Eichbaum et al.)

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Abdominal Actinomycosis: Actinomycosis may be defined as a chronic suppurative or granulomatous disease caused by a specific organism, Actinomyces bovis, characterized by the formation of multiple abscesses, draining sinuses, abundant granulation tissue, dense fibrous scar tissue, and by the appearance of tangled mycelial masses(sulfur granules) in the discharges of involved tissues. Three regions of the body in man most frequently are involved: the cervicofacial, in 60 percent of the cases; the abdomen, in 20 percent; and the thorax in about 20 percent. While a number of therapeutic agents have been used for cervicofacial lesions with equally good results, the prognosis in cases

of pulmonary and abdominal forms has been grave despite the use of a multitude of local and systemic therapeutic measures including major surgical procedures. With the advent of chemotherapy and, shortly thereafter, of the antibiotics, however, a new era has begun in the treatment for this painful, slow-progressing, and debilitating disease, and the prognosis has improved immeasurably.

Good reviewed all cases of pulmonary and abdominal actinomycosis observed at the Mayo Clinic prior to 1929. Except for occasional reports of cases and a study of penicillin in the treatment of all forms of actinomycosis by Nichols and Herrell, no further comprehensive review of cases of this disease at the clinic has been attempted. In the past 35 years 122 cases of actinomycosis, primarily involving the abdomen or gastrointestinal tract, have been diagnosed at the clinic and those cases form the basis of this study.

A. bovis, the causative organism of abdominal actinomycosis, is found only in human beings and animals and leads a saprophytic existence in the flora of the mouth, the respiratory tree, and the gastrointestinal tract. It appears to be incapable of penetrating an intact, normal, mucous membrane and becomes pathogenic only when this barrier has been destroyed by disease or trauma, and the actinomycetes have escaped into tissues which are less resistant to their growth. In most instances, therefore, abdominal actinomycosis probably occurs as a complication of an acute perforative or ulcerative disease of the gastrointestinal tract. Of the 122 cases of abdominal actinomycosis comprising this series, 103 patients had had emergency surgical procedures for acute gastrointestinal lesions prior to the onset of the actinomycosis. Typical acute appendicitis, usually perforative, preceded the onset of the infection in 88 patients; 4 patients had had perforations of peptic ulcer, and 1 had had perforation of the gastric wall by a chicken bone. Sigmoidal diverticulitis, abdominal trauma, and other gastrointestinal ulcerative or perforative diseases accounted for other emergency procedures. In only 7 of the 122 cases there was no apparent history of such a previous acute illness.

Abdominal actinomycosis occurs most frequently in the young adult and middle-aged groups, has a widespread geographical distribution, affects people in all occupations, and affects males approximately twice as frequently as females. It is an uncommon, but by no means rare, disease. The pathologic aspects of the lesions have been described, and extension proceeds usually by direct invasion of adjacent tissues. Microscopic identification and culture of the organism are essential in diagnosis of the disease.

Treatment of abdominal actinomycosis consists of strenuous dietary and supportive therapy, including multiple transfusions of whole blood as indicated. The drug of choice is penicillin in dosages of approximately 1,000,000 Oxford units daily for from 4 to 8 weeks. The duration of treatment and the optimal dosage will vary depending on the response of the patient to treatment and the

susceptibility of the individual strain of A. bovis as demonstrated by culture in vitro. Sulfadiazine probably should be used in conjunction with penicillin, not only because of its inhibitory effect on the causative organism, but also because of its effect on the many other contaminating bacteria which are present. Surgical procedures will be indicated, varying with the extent of the lesion, the patient himself, and his response to drugs used in treatment. Adequate incision and drainage of abscesses are necessary. More radical procedures, such as resection of tubo-ovarian granulomas, may be indicated if there are recurrences after adequate treatment with penicillin and sulfadiazine.

Adequate follow-up data were available in 108 of the 122 cases of abdominal actinomycosis. The rate of cure in 73 cases in which penicillin or sulfonamides were not available for treatment was 16 percent. In 13 cases in which adequate dosages of one of the sulfonamides were used the rate of cure or improvement was 38.7 percent. In 24 cases in which adequate penicillin therapy was instituted the rate of cure or improvement was 95.8 percent. Adequate dosages of both penicillin and sulfonamides were used in 1 case. Strenuous dietary and supportive therapy, as well as surgical procedures, were utilized in all cases. (Surgery, November '50, H. C. Putman, Jr. et al.)

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List of Recent Reports Issued by Naval Medical Research Activities:

Naval Medical Research Institute, NNMC, Bethesda, Maryland.

Morphology and Enumeration of Human Blood Platelets, NM 006 012.04.28 (formerly NM 007 039), 8 June 1950.

A Recording Automatic Syringe for Rapid Intravenous Injections at Regulated Rates, NM 007 081.07.05, 22 August 1950.

Mortality in Swine and Dose Distribution Studies in Phantoms Exposed to Super-Voltage X-Radiation, NM 006 012.04.32, 29 August 1950.

Naval Medical Research Unit No. 4, ADCOM, USNTC, Great Lakes, Illinois.

The Technic and Significance of Antistreptolysin O and Antistreptolysin S Determinations, NM 005 051.07.01, 1 November 1950.

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From the Note Book

1. Physicians using gelatin or dextran should remember that they may produce pseudo-agglutination of red cells which interferes with blood typing and crossing. A specimen of blood for typing and cross matching should be obtained before such macromolecular solutions are injected. (Am. J. Surg., December '50, W. T. Fitts, Jr.)

2. Dr. Gunnar Thorsén of the Surgical University Clinic, Stockholm, Sweden, presented a lecture on some effects of dextran on aggregation, sedimentation, and intravascular sludging of erythrocytes. The lecture together with a colored motion picture film was given at the Naval Medical Research Institute, National Naval Medical Center, Bethesda, on 15 December 1950.

3. At the recent Clinical Session of the A.M.A. at Cleveland the House of Delegates had a record attendance. Of 198 eligible delegates, 195 were seated on opening day. At the same meeting the House of Delegates established a new Section on Military Medicine. The House also chose Dr. Dean S. Luce of Canton, Massachusetts, as the "General Practitioner of the Year." (16 December '50 Editorial, J.A.M.A.)

4. A glass fiber filter paper 5,000 times more effective than present commercially available filters and containing no foreign imports has been developed by the Naval Research Laboratory. The paper, made of glass fibers 1/20th the thickness of the human hair, is impervious to fungus and can be made in conventional paper mills. It should find many uses, industrial and military, because of its electrical insulating properties. (PIO, Dept. Defense, 7 December '50)

5. A new compound found in preliminary trials to be of value in relief of many patients with edema and dropsy has been developed at the Sterling-Winthrop Research Institute. So far, the compound is known only by its laboratory number, Win 3000. (November '50 Am. J. Digest. Dis.)

6. According to the latest available information the annual production of opium is estimated to be 1,500 tons, of which approximately 100 tons are sufficient for the world's medicinal and scientific needs. (October '50 Merck Report)

7. A non-technical analysis of "The Effects of Atomic Weapons" appears in the December 1950 All Hands. This analysis contains material from a series of articles written for the New York Times by W. L. Lawrence. This information is comprehensive and should be read by everyone interested in defense against atomic weapons.

8. Hemangioma of the colon, the rarest type of tumor occurring in the large bowel, is discussed in the December 1950 American Journal of Surgery by W. W. Babcock and K. T. Jonas.

9. A conference on nutrition, the first of 2 series to be held in the interest of formulating a research program on the fundamental aspects of nutrition for ONR was held in New York on 17 November 1950. The gap between the development of scientific knowledge in nutrition and its application to items for field operations received particular attention.

10. A cheap chemical substance, di-methyl phthalate, made up into a cream with white wax and peanut oil and applied to the shoes and exposed skins of persons is reported to repel leeches as well as mosquitoes. (2 December '50 Science News Letter)

11. CDR C. A. Schlack, DC, USN, Head, Dental Branch, ONR, presented "Past and Present Dental Research" at the AAAS meeting, Cleveland, Ohio, on 30 December 1950.

12. "Homologous Serum Jaundice and its Relation to Methods of Plasma Storage" is discussed in 25 November 1950 J.A.M.A., J. G. Allen et al.

13. CAPT A. C. Graybiel, MC, USN, has been awarded the Theodore Clyster Award for 1950. This award is presented each year to the person who contributes most in the field of aviation medicine. (PIO, BuMed, 20 December '50)

14. A Committee on Pesticides was recently established at the headquarters of the A.M.A. to study health problems associated with the use of pesticides. The Committee is undertaking an intensive educational program in the recognition and overcoming of the difficulties which certain of the newer compounds present. (December '50 Industrial Hygiene News Letter)

15. "Neurosyphilis, Post-treatment Evaluation Four to Five Years Following Penicillin and Penicillin Plus Malaria" appears in the November 1950 American Journal of Syphilis, Gonorrhea, and Venereal Diseases, A. C. Curtis et al.

16. The Brown Electrodermatome, a new instrument used in skin grafting, is described in November 1950 Surgery by H. T. Coswell et al.

17. "Occupational Hazards in Sewage Handling Plants" is discussed in the December 1950 Industrial Hygiene News Letter.

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Vascular Surgery Course Attended: Capt. Luther G. Bell, MC, USN, NavHosp, Philadelphia; Capt. Garland A. Gray, MC, USN, NavHosp, Chelsea; Capt. Herman A. Gross, MC, USN, NavHosp, Bethesda; Capt. Paul E. Spangler, MC, USN, NavHosp, Portsmouth, Va., and Capt. Clifford F. Storey, MC, USN, NavHosp, St. Albans, recently attended a two weeks specialized training course in vascular surgery. The course was arranged and conducted by Gerald H. Pratt, M.D., at St. Vincent's Hospital and the New York University College of Medicine, in New York City.

Specialized instruction was given in the diagnosis and treatment of vascular lesions, the role of the vascular system in the treatment of trauma and burns, amputation, blood replacement, anticoagulant therapy, and the prevention and treatment of conditions resulting from exposure to cold. Attending medical officers, all Board certified or qualified surgeons, were impressed by the timeliness of the course and the excellence of its presentation by the sponsoring institutions and participating surgeons of the New York area. As an integral part of the training plan, the information obtained by the medical officers will be disseminated to other medical officers, nurses, and hospital corpsmen assigned to their respective surgical services. (Professional Div., BuMed)

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Advanced Course - Radioisotopes in Medicine: The Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee, has announced that an advanced course in Radioisotopes in Medicine will be given at Oak Ridge, 5-16 February 1951.

The course is open to all research workers interested in the application of radioisotopes to medical problems. A knowledge of nuclear radiation properties and general knowledge of radioisotope technics are prerequisite for attendance at the course.

Medical officers desiring to attend should forward applications via BuMed without delay. The registration fee of $25.00 will be borne by BuMed and authorization orders ONLY provided in the case of medical officers accepted for the course. No reliefs can be furnished for officers during the period they are absent from their regular duty assignments. (Professional Div., BuMed)

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Detergent Hazard: During a recent survey relative to the merits of dishwashing machines and detergents used which was conducted by BuShips with a manufacturer's representative aboard, the following paragraph was contained in a report of this survey that was submitted to the Office of the Quartermaster General:

"As a result of this trip, I am more convinced than ever that there is a long step between a theoretical consideration involved in the selection of

detergent and dishwashing machines and the actual way in which these products are used in the field. For example, I discovered that aboard ship, a hammer and a paint scraper are always needed to get the detergent out of the drums in which it is supplied since it is always caked to such an extent that it is not free flowing. Small particles of this type of detergent in the eyes can cause extreme damage. I think it quite important that medical officers be informed of this situation and that goggles be supplied to men assigned to this particular task. This immediate step, I feel, is much more important from a practical standpoint than additional work on detergent specifications."

Medical officers should assure themselves that provisions have been taken to protect all personnel aboard ship from injury. The eye protection phase is only a part of accident protection, and in an effort to reduce the high rate of accidents the Medical Officer should be ever alert for hazards. (Safety Div., BuMed)

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Course in Industrial Health: The increasing importance of medical care in industrial establishments and the probable expansion of the Navy's shipyards and air stations will require additional medical officers trained in industrial medicine. Applications are therefore invited from regular Navy medical officers for a special two-month course in Industrial Health to be given from 5 February to 31 March 1951 at the Harvard University School of Public Health, Boston, Massachusetts.

The course, presented by Dr. Philip Drinker and associates, offers intensive instruction in the following subjects: Basic Problems in Industrial Hygiene (lectures, demonstrations, and field trips); Industrial Medicine (elements of an industrial medical program, medico-legal aspects, disability evaluation, relations to safety, nursing, and planning, using case studies of plants); Personnel Administration (employee health, interrelations with safety, production, etc.); Human Problems of Adjustment in Industry (stresses, biologic adjustment, design, placement, etc.); and Industrial Medical Clinics.

Regular Navy medical officers desiring to attend this course or courses of similar nature to be given at future dates should submit requests to the Bureau of Medicine and Surgery. Authorization orders ONLY will be provided for those officers approved to attend the courses. Cost of tuition and fees will be borne by BuMed. (Professional Div., BuMed)

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BUMED CIRCULAR LETTER 50-132 4 December 1950

To: All Ships and Stations

Subj: Policy regarding BuMed's recommendations on changes in rating from Group X (Medical) to Group XI (Dental) within the Hospital Corps

1. Requests from Group X personnel for a course of instruction at U. S. Naval Dental Technician Schools (Class A) with an ultimate change in rating to the Dental Rating Group, and requests for changes in rating from Group X to Group XI in the case of personnel holding a certificate of instruction or who have been designated Dental Technician, General will not be recommended by this Bureau to the Chief of Naval Personnel. A change in rating will, however, be recommended for persons designated Dental Technician, Prosthetic.

2. The foregoing has been established for the following reasons:

(a) All U. S. Naval Reserve personnel recalled under Group X quotas and whose rating is subsequently changed to Group XI are a charge against the former's quota, but are actually a gain to the Dental Rating Group in excess of its quota.

(b) Assigning Group X personnel to a course of instruction at a U. S. Naval Dental Technician School (Class A) imposes an additional procurement problem on the Medical Rating Group without contributing materially to the mission of the Hospital Corps as a whole.

(c) Due to the length of time required to properly train a Dental Technician, Prosthetic, and the fact such cases will be relatively few in number, it has been agreed that requests for changes of rating from personnel in this category will be given favorable recommendation. In such cases the person is obviously more qualified for the Dental Rating Group, whereas, Dental Technicians, General are considered to be equally qualified for either group.

3. It is recognized that the foregoing is restrictive, however, in view of the current status of the Hospital Corps such a policy is considered justified.

-C. A. Swanson

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BUMED CIRCULAR LETTER 50-133 4 December 1950

From: Chief, Bureau of Medicine and Surgery
To: Holders of the Bulletin of BUMED Circular Letters

Subj: X-ray films; transfer with patients

1. Clinically relevant x-ray films should be forwarded with patients who are transferred from one medical facility to another. Notations of such transfers shall be made on the NavMed-H-8's and appropriate out-cards placed in the x-ray files.

-C. A. Swanson

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-134 5 December 1950

From: Chief, Bureau of Medicine and Surgery
To: Commanding Officers, All Naval Hospitals (Continental)

Subj: Medical and service records of personnel ordered to appear before physical evaluation boards, request for

Ref: (a) BuMed C/L 50-22
(b) BuMed C/L 50-47

1. Heretofore the medical and service records of members of the naval service who have been ordered to appear before a physical evaluation board have been furnished the physical evaluation board by the Navy Department upon receipt in the Department of a copy of the member's orders as required by references (a) and (b).

2. In order to minimize delay in appearance of members before physical evaluation boards, addressees shall request medical and service records as soon as it becomes apparent that a member may be ordered to appear before a physical evaluation board. Such records shall be requested not later than the date the member appears before the clinical board, and dispatch shall be used when indicated in the interest of saving time.

3. Requests should contain the member's name in full, his file or serial number, and his rank or rate, and should designate the physical evaluation board before which the member will be ordered. Address requests to the Bureau of Medicine and Surgery, Code 334. Include the physical evaluation board and Headquarters, U. S. Marine Corps (MarCorps Code DM) or the Bureau of Naval Personnel (Code E-340 in case of enlisted members, Code E-24 in case of officers) as information addressees.

4. If, for any reason, a member is not ordered to appear before a physical evaluation board after medical and service records have been requested, addressees

will so advise the physical evaluation board and will request that the records be returned to the Department by the physical evaluation board.

5. The foregoing does not modify current instructions concerning distribution of copies of orders for appearance before physical evaluation boards.

-C. A. Swanson

The above letter will not be printed in the Navy Department Bulletin.

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MARCORPS-AO-1 JOINT LETTER 7 December 1950
BUMED CIRCULAR LETTER 50-135

From: Chief, Bureau of Medicine and Surgery
Commandant of the Marine Corps
To: Holders of the Bulletin of BuMed Circular Letters

Subj: Joint BuMed-MarCorps letters; cancellation of several

1. The following letters are hereby cancelled for the reasons indicated:

BuMed Cir Ltr No.	Reason for Cancellation
44-204	No longer applicable.
45-59	Served its purpose as a wartime measure.
46-80	Served its purpose.

-C. A. Swanson -C. B. Cates

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-136 8 December 1950

From: Chief, Bureau of Medicine and Surgery
To: Commandants, All Continental Naval Districts and River Naval Commands, and Chief of Naval Air Training (District and Staff Dental Officers)

Subj: Refresher and Short Postgraduate Courses for Dental Officers

Ref: (a) BuMed Circular Letter 48-4

Reference (a) is hereby cancelled and is superseded by this letter.

This letter provides information and directions concerning refresher and short postgraduate courses in civilian dental colleges for as many dental officers of the Regular Navy and Naval Reserve serving on active duty as possible within the funds available. It requests that the Bureau be kept informed of all refresher and short postgraduate courses which may become available in continental naval districts and Potomac River Naval Command. Certain specific data are required by the Bureau. Following receipt of data BuMed will advise commandants of courses made available. District and Staff Dental Officers will then disseminate the information to all dental officers in their districts and commands and advise officers on submitting requests to BuMed in conformance with paragraph 1326, MMD. Requests from Reserve Dental Officers must include statement agreeing to remain on active duty for 1 year following completion of the specified course. Dental officers of the Regular Navy must include statement that they will not resign from the naval service for 1 year following completion of specified course. Dental officers will be given official authorization to attend courses but travel and per diem will not be authorized. Tuition and other fees will be paid by BuMed. Requests should reach BuMed at least 8 weeks prior to the date on which the course will commence.

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-137 8 December 1950

From: Chief, Bureau of Medicine and Surgery
To: District Medical Officers (Except 10, 14, 15, and 17) River Command Medical Officers, Potomac and Severn River Naval Commands; Staff Medical Officer, Naval Air Training Command; Surgeon, Marine Corps Schools, Quantico, Va., Senior Medical Officer, Marine Corps Recruit Depot, Parris Island, S. C., Commander Service Force, U. S. Atlantic Fleet and Commander Service Force, U. S. Pacific Fleet
Via: Commandants, Chief of Naval Air Training, Commandant, Marine Corps Schools, Quantico, Va., and Commanding General, Marine Corps Recruit Depot, Parris Island, S. C.

Subj: Form NAVMED-590; Combined Report of Enlisted Hospital Corps: revision of

Ref: (a) BuMed Circular Letter 47-142

Encl: (1) Copies of Forms NAVMED-590 (Rev. 10-50)

1. Reference (a) is hereby cancelled and superseded.

2. The revised NAVMED-590 shall be submitted weekly in duplicate by addressees to report all enlisted personnel of the Hospital Corps except Group XI, Dental. Dental ratings shall be reported by District or Staff Dental Officers on NAVMED-1323.

3. Detailed instructions for the preparation of NAVMED-590 (Rev. 10-50) are not considered necessary. The revised form is believed to be self-explanatory.

4. An initial supply of the revised NAVMED-590 (Rev. 10-50) is herewith submitted as Enclosure 1. Future requirements shall be requisitioned from the appropriate District Publications and Printing Office.

-C. A. Swanson

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BUMED CIRCULAR LETTER 50-138 11 December 1950

From: Chief, Bureau of Medicine and Surgery
To: BuMed Management Control Activities (as indicated)

Subj: Fiscal Services Work Measurement Program

Ref: (a) BuMed Circular Letter No. 50-110 of 3 October 1950
(b) Work Measurement Report, Fiscal Function, NAVMED 1322

1. It is requested that the last sentence in the example under Subfunction 3, Civilian Pay Roll, Leave and Retirement, of the instructions forwarded with reference (a) be changed to read, "The work unit to be reported is 90 per annum and 400 per diem employees, total 490."

2. In addition, the instructions for the supplementary data under this subfunction provide that the total number of pay roll changes for per annum and per diem employees for the pay roll periods ending during the month should be reported. However, Item 3 of the Supplementary Data on the report form(NAVMED 1322) indicates that the "Average number of pay roll changes per pay period" is required. In order to bring the report form into agreement with the instructions, all available copies of reference (b) should be revised so that Item 3 of the Supplementary Data reads, "Total number of pay roll changes."

3. An examination of the reports received in the Bureau under the Fiscal Services Work Measurement Program indicates that the instructions forwarded with reference (a) are not always clearly understood. Inasmuch as the data derived from these reports is analyzed by the Bureau of the Budget and is used by the Bureau of Medicine and Surgery in justifying budget estimates, it is essential that these reports be as accurate as possible. It is requested that the instructions contained in reference (a) be reviewed and, if not understood, a request for clarification be submitted to the Bureau.

-C. A. Swanson

The foregoing letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-139 14 December 1950

From: Chief, Bureau of Medicine and Surgery
To: Naval Stations

Subj: Definitions of fixed medical treatment facilities

Ref: (a) SecDef directive of 27 Apr 1950
(b) SecNav ltr of 16 Nov 1950
(c) SecNav ltr of 3 Aug 1950, NDB of 15 Aug 1950, 50-600 p. 10

1. By reference (b) the Secretary of the Navy designated certain fixed medical treatment facilities as "Infirmaries" and "Dispensaries".

2. Definitions for fixed medical treatment facilities were established by reference (a), and are quoted herewith:

(a) HOSPITAL: A hospital is a medical treatment facility primarily intended and appropriately staffed and equipped to provide relatively full diagnostic and therapeutic service in the field of general medicine and surgery or in some circumscribed field or fields of restorative medical care, together with bed care, nursing and dietetic service to patients requiring such care and treatment. A hospital may, in addition, discharge the functions of an infirmary or the functions of a dispensary, or both.

(b) INFIRMARY: An infirmary is a medical treatment facility primarily intended to provide beds and treatment for patients from the local military command or from the immediate vicinity thereof, who are temporarily incapacitated for performance of duty because of relatively minor illness or injury, with a favorable prognosis for early return to duty. An infirmary may also perform the functions of a dispensary, but it is not intended, equipped and staffed to undertake to discharge the functions of a hospital by providing extended bed care, or the other diagnostic, therapeutic, nursing and dietary services required by patients with the relatively more serious and complex diseases or conditions.

(c) DISPENSARY: A dispensary is a medical treatment facility primarily intended to provide examination and treatment for ambulatory patients, arrangements for the transfer of patients requiring bed care, and first aid for emergency cases. Dispensaries are also intended to perform a wide variety of non-therapeutic activities related to the health of the personnel served, such as physical examinations, inspections, and immunizations. While a dispensary may provide a bed for a patient awaiting transfer or needing overnight observation, it does not

provide beds for definitive care of patients. On occasion a dispensary may render visiting care of patients in their own quarters.

3. The foregoing definitions will not be construed as conflicting with paragraph 1c of reference (c).

-C. A. Swanson

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BUMED CIRCULAR LETTER 50-140 18 December 1950

From: Chief, Bureau of Medicine and Surgery
To: All Holders of the Bulletin of BuMed Circular Letters

Subj: Pathological materials and records; forwarding of

Ref: (a) BuMed Cir Ltr No. 50-8
(b) BuMed Cir Ltr No. 50-50 (amended by BuMed Cir Ltr No. 50-125)
(c) BuMed Cir Ltr No. 50-51

In accordance with references (a) and (b) the Armed Forces Institute of Pathology is charged with certain specific duties in connection with the reception, processing, recording, and filing of certain information and materials concerned in the science of pathology.

This letter directs that the provisions of reference (b) be implemented and that all materials and essential records required in references be promptly forwarded for processing to the Armed Forces Institute of Pathology. It also directs commanding officers, having cognizance of lost or misplaced pathologic specimens, to furnish the Bureau with such information as expeditiously as possible for further transmittal to the AFIP.

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-141 19 December 1950

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals, Hospital Ships, and Larger Continental Infirmaries

Subj: Report of Surgical Operations, NavMed-P

Ref: (a) BuMed C/L 49-156 of 23 Nov 1949
(b) Manual of the Medical Department, par 5113

1. It is apparent that the number of blood and plasma transfusions reported on subject form did not in all instances reflect the actual number of transfusions given during 1949. These figures are not only of interest but also of value for planning purposes. Attention is directed to the need for accurate reporting of blood and plasma transfusions (operations titles, 990, 991, and 992) on NavMed-P for 1950.

2. The majority of hospitals in 1949 included sub-headings showing anatomic part under the operation titles listed in Part B of the report. For example, under "716, Bone Graft" as many as 20 different anatomic parts were listed separately. While this type of information has a definite value, it is not considered to be essential to the purpose of NavMed-P and is not required in that report; the requirement is only for the total number of operations for each applicable code number and operation title. The exclusion of detailed sub-divisions of operation titles should result in a saving of effort in preparing the report.

-C. A. Swanson

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-142 20 December 1950

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals, Continental Convening Authorities, Physical Evaluation Boards

Subj: Transfer of Navy and Marine Corps patients to Veterans Administration facilities

Ref: (a) Executive Order 10122 of 14 April 1950
(b) SecNav ltr, P19-2/00 of 25 October 1950, Item No. 50-831, NDB 31 October 1950

Encl: (1) Form of request for designation of Veterans Administration facility

This letter states that any member of the naval service discharged or retired for physical disability and in need of hospitalization following discharge or retirement may request hospitalization in a Veterans Administration Facility. Entitlement to hospitalization is contingent upon the member establishing his right to hospitalization under the laws governing the Veterans Administration. Some members retired for physical disability may be eligible for hospitalization in both Navy Medical facilities and Veterans Administration facilities, but members, who are discharged and inactive members permanently retired for physical disability, requiring hospitalization for one of the chronic diseases set

forth in section 5 of reference (a) must obtain hospitalization in Veterans Administration Facilities if they desire hospitalization at government expense.

The letter outlines the procedure to be followed by commanding officers of hospitals and physical evaluation boards if the member will require hospitalization in a Veterans Administration Facility following discharge or retirement for physical disability and if he so requests and if he will not be entitled to hospitalization in a Naval Medical Facility.

This letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-143 21 December 1950

From: Chief, Bureau of Medicine and Surgery
To: All BuMed Managed Activities, Continental

Subj: Typewriters; policy regarding maintenance, repair and replacement

Ref: (a) ONM ltr M71:KAG:meg Serial 194 L8 M1016502 of 20 Oct 1950

This letter describes the policy of the Bureau regarding maintenance, repair, and replacement of typewriters in BuMed managed continental activities.

This letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-144 21 December 1950

From: Chief, Bureau of Medicine and Surgery
To: All Dental Officers

Subj: Standardization of Specifications for Conducting Dental Examinations and Dental Classification of Individuals

Encl: (1) SecDefense memo of 20 Oct 1950 to the Secretaries of the Army, Navy and Air Force

1. Enclosure one provides standard Specifications for Conducting Dental Examinations and a standard Dental Classification of Individuals for the use of all dental officers. The Type 1, Ideal Examination, shall be made whenever it may be necessary or desirable to make an exhaustive dental examination. Because of the importance of the Dental Record, this type of dental examination should be made whenever a new NAVMED-H-4 is made and the upper chart of this form

accomplished. While it is desired that this be done whenever possible, it is realized that at certain activities, such as training centers, it may not be practical at all times to make the Type 1 dental examination for recruits and others because of insufficient examining personnel, lack of available time for making the examination and inadequate stocks of dental x-ray film. In such circumstances the Type 2, Routine Examination is considered to be adequate, provided right and left posterior bite-wing roentgenograms are made which will include all bicuspids and molars which have approximate surface relationships, and such periapical roentgenograms are made as may be considered to be necessary for disclosing dental disease which may be suspected to be present. The Type 3 examination may be made when the Type 1 or Type 2 examination may not be necessary or when the force of circumstances prevents the making of either the Type 1 or Type 2 examination. The Type 4 examination is purely a screening examination as the title implies.

2. The dental officer shall make an entry under "REMARKS" whenever a new Dental Record, NAVMED-H-4, is opened, which will indicate the type of examination made. Example: Type 1 examination.

3. The Dental Classification of Individuals shall be used whenever it is necessary to classify personnel for purposes of urgency or priority of dental treatment, or availability for transfer, etc.

-C. A. Swanson

ENCLOSURE (1)

THE SECRETARY OF DEFENSE
WASHINGTON

20 October 1950

MEMORANDUM FOR THE SECRETARY OF THE ARMY
THE SECRETARY OF THE NAVY
THE SECRETARY OF THE AIR FORCE

Subject: Standardization of Dental Classification, and of Specifications for Conducting Dental Examinations

1. In order to effect uniformity in the nomenclature and definitions used in the Department of Defense with respect to dental examinations and classification, it is hereby declared to be the policy of the Department of Defense to use the following specifications and definitions:

SPECIFICATIONS FOR CONDUCTING DENTAL EXAMINATIONS:

Type 1. Ideal Examination. Mouth mirror and explorer examination; adequate natural or artificial illumination; full mouth intra-oral,

periapical and posterior bite-wing roentgenograms; when indicated, percussion, thermal, and electrical tests, transillumination, and study models.

Type 2. Routine Examination. Mouth mirror and explorer examination; adequate natural or artificial illumination; posterior bite-wing roentgenograms; periapical roentgenograms, when indicated.

Type 3. Modified Routine Examination. Mouth mirror and explorer examination; adequate natural or artificial illumination.

Type 4. Screening Examination. Mouth mirror and explorer or tongue depressor examination; available illumination.

DENTAL CLASSIFICATION OF INDIVIDUALS:

Class 1. Individuals requiring no dental treatment.

Class 2. Individuals requiring routine but not early treatment of conditions such as:
- a. Moderate calculus
- b. Prosthetic cases not included in Class 4
- c. Caries - not extensive or advanced
- d. Periodontal diseases - not extensive or advanced
- e. Oral conditions requiring corrective or preventive measures

Class 3. Individuals requiring early treatment of conditions such as:
- a. Extensive or advanced caries
- b. Extensive or advanced periodontal disease
- c. Pulpal or apical infection (root canal therapy)
- d. Chronic oral infections
- e. Heavy calculus
- f. Cases requiring removal of one or more teeth or other surgical procedures not included in Class 5

Class 4. Individuals requiring essential prosthetic appliances, including:
- a. Individuals with insufficient teeth to masticate the service ration
- b. Other individuals in need of an appliance essential to their duty

Class 5. Individuals requiring emergency dental treatment for conditions such as:
- a. Injuries
- b. Acute oral infections (parietal and periapical abscesses, Vincent's infection, acute gingivitis, acute stomatitis, etc.)
- c. Painful conditions.

2. It is desired that proposed regulations or directives relating to the above specifications and classifications be reviewed by the Dental Task Group of the Committee on Standardization of Medical Forms, Recording and Reporting Procedures in the Department of Defense prior to publication, to insure common interpretation and unified procedures by the dental services of the three departments.

/s/ G. C. Marshall

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 50-145 28 December 1950

From: Chief, Bureau of Medicine and Surgery
To: Holders of the Bulletin of BuMed Circular Letters

Subj: BuMed circular letters; cancellation of

1. The following BuMed circular letters are cancelled for the reasons indicated:

Letter No.	Subject	Reason for Cancellation
45-148	Large scale dispersal of insecticides, coordination of	Subject covered by OpNav ltr, 46-2182, NDB Cum Ed, p. 166
47-56	Kahn antigen--requisition for quantities in excess of requirements	Served its purpose.

-C. A. Swanson

The above letter will not be printed in the Navy Department Bulletin.

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ALNAV 149 19 December 1950

Subj: Authorized leave

AlNav 149. Basegram. Reference BuPers Manual Articles Charlie Six Two Eleven and Charlie Six Three Zero Six. MarCorps Manual Pars One Four Zero Five Four and One Four One Five Four. Effective immediately provisions foregoing modified as follows. Commanding officers Naval Hospitals CLUS authorized grant up to thirty days sick leave to Naval and Marine Corps personnel without reference to medical Survey or clinical board or higher authority.

-Francis P. Matthews

NAVY DEPARTMENT
BUREAU OF MEDICINE AND SURGERY
WASHINGTON 25, D. C.

OFFICIAL BUSINESS

Permit No. 1048
NavMed-369 - 1/51